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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/939,689	08/28/2001	Felix Franks	212345US22CONT	8127

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EXAMINER
RUSSEL, JEFFREY E

ART UNIT	PAPER NUMBER
1654	

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10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/939,689	FRANKS ET AL.	
	Examiner	Art Unit	
	Jeffrey E. Russel	1654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 October 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-29,31-35 and 37-54* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *17 and 18* is/are allowed.

6)☒ Claim(s) *21,26-29,31-35,37-44 and 46-54* is/are rejected.

7)☒ Claim(s) *19,20,22-25, and 45* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. *07/479,939* .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. The appropriate maintenance fees for U.S. Patent No. 5,098,893 have been paid, and therefore the reissue procedures are available for this patent.

2. The assent of the assignee under 37 CFR 1.172 filed October 3, 2002 is approved.

3. The original patent was actually surrendered during the prosecution of the parent reissue application 09/270,791, and therefore the requirement set forth in 37 CFR 1.178(a) has been satisfied.

4. Applicant is reminded of the continuing obligation under 37 CFR 1.178(b), to timely apprise the Office of any prior or concurrent proceeding in which Patent No. 5,098,893 is or was involved. These proceedings would include interferences, reissues, reexaminations, and litigation.

Applicant is further reminded of the continuing obligation under 37 CFR 1.56, to timely apprise the Office of any information which is material to patentability of the claims under consideration in this reissue application.

These obligations rest with each individual associated with the filing and prosecution of this application for reissue. See also MPEP §§ 1404, 1442.01 and 1442.04.

5. The reissue declaration filed October 3, 2002 is approved.

6. Claims 21, 31, 37-39, 41, 48, and 54 are rejected under 35 U.S.C. 251 as being based upon new matter added to the patent for which reissue is sought. The added material which is not supported by the prior patent is as follows: There is no original disclosure supporting the exclusion of rennin as is recited in instant claims 21, 31, 37, 39, and 41. Rennin is not mentioned in the disclosure, and silence in the specification is not support for a negative claim limitation. See Ex parte Grasselli, 231 USPQ 393, aff'd on reconsideration 231 USPQ 395 (Bd. App.

1983). Accordingly, the negative claim limitations in these claims constitute new matter. Claims 38, 48, and 54 recite dissolution in an aqueous solution having a pH of about 7, which embraces dissolution at slightly acidic pHs. However, there is no original disclosure in the specification of dissolution at slightly acidic pHs, the only pHs recited in the sections of the specification cited by Applicants ranging from 7.0 to 7.6. Accordingly, the pH range recited in claims 38, 48, and 54 is new matter.

7. Claims 21, 31, 37-39, 41, 48, and 54 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no original disclosure supporting the exclusion of rennin as is recited in instant claims 21, 31, 37, 39, and 41. Rennin is not mentioned in the disclosure, and silence in the specification is not support for a negative claim limitation. See Ex parte Grasselli, 231 USPQ 393, aff'd on reconsideration 231 USPQ 395 (Bd. App. 1983). Claims 38, 48, and 54 recite dissolution in an aqueous solution having a pH of about 7, which embraces dissolution at slightly acidic pHs. However, there is no original disclosure in the specification of dissolution at slightly acidic pHs, the only pHs recited in the sections of the specification cited by Applicants ranging from 7.0 to 7.6. Accordingly, the pH range recited in claims 38, 48, and 54 is not supported by the original disclosure of the invention.

8. Claims 21, 27-29, 31, 37, and 46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Dependent claims 21, 31, and 37 recite that the biologically active material is not renin. However, the independent claims upon which these claims depend

do not permit the biologically active material to be renin, either by narrowly defining the permissible enzymes or by excluding enzymes as a whole from constituting the biologically active material. Accordingly, dependent claims 21, 31, and 37 are at best redundant to what is already specified in their independent claims. Claim 46, lines 15-16, recites that the enzyme can comprise an enzyme. It is also unclear what constitutes "restriction dehydrogenase enzymes". It is believed that at line 6, "restriction dehydrogenase enzymes, enzymes" should be re-written as "dehydrogenase enzymes, restriction enzymes".

9. Claims 19-25, 38, and 45 are objected to because of the following informalities: At claims 38 and 45, second-to-last line of each claim, the semicolon after "dehydrogenase enzymes" should be changed to a comma. Appropriate correction is required as per 37 CFR 1.173(b).

10. Claims 38 and 48 are identical in scope, and claims 49 and 50 are identical in scope. Upon an indication of allowable subject matter, one of each pair of these claims will be objected to under 37 CFR 1.75, consistent with the procedure set forth in MPEP 706.03(k). In order to expedite prosecution of this application, it is recommended that Applicants amend or cancel one of each pair of these claims in the response to this Office action. Applicants should review all pending claims to ensure that no other claims of identical scope are present.

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

12. Claims 26-29, 31-35, 37-44, and 46-54 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-94 of U.S. Reissue Patent No. 37,872 (which issued based upon reissue Application No. 09/270,791). Although the conflicting claims are not identical, they are not patentably distinct from each other. The '872 patent claims the compositions claimed in instant claims 26-31 and 46 (see, e.g., claims 17, 23, and 62), with the exception that the '872 patent does not claim a weight ratio of purified biologically active material to carrier substance or a dissolution pH. It would have been obvious to one of ordinary skill in the art to determine all operable and optimal weight ratios and dissolution pHs for the claimed compositions of the '872 patent because weight ratio is an art-recognized result-effective variable which is routinely determined and optimized in the chemical composition and pharmaceutical arts, and because pH is an art-recognized result-effective variable which is routinely determined and optimized in the chemical solution and pharmaceutical arts. Further, product-by-process claims suggest the processes recited therein. Claims 39-44 and 49-53 are anticipated by numerous compositions claimed in the '872 patent, e.g., by claims 17 and 21.

13. Claims 26-29, 31-35, 37-44, and 46-54 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 17-71 of copending Application No. 09/939,688. Although the conflicting claims are not identical, they are not patentably distinct from each other. Although the conflicting claims are not

identical, they are not patentably distinct from each other. The '688 application claims the compositions claimed in instant claims 26-31 and 46 (see, e.g., claims 23, 37, and 63), with the exception that the '688 application does not claim a weight ratio of purified biologically active material to carrier substance or a dissolution pH. It would have been obvious to one of ordinary skill in the art to determine all operable and optimal weight ratios and dissolution pHs for the claimed compositions of the '688 application because weight ratio is an art-recognized result-effective variable which is routinely determined and optimized in the chemical composition and pharmaceutical arts, and because pH is an art-recognized result-effective variable which is routinely determined and optimized in the chemical solution and pharmaceutical arts. Further, product-by-process claims suggest the processes recited therein. Claims 39-44 and 49-53 are anticipated by numerous claims in the '688 application, e.g., by claims 47, 54, and 65. Further, a method of making claim suggests claims drawn to the products made by the method.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

14. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

15. Claims 26, 28, 29, 31, 43, 46, and 52 are rejected under 35 U.S.C. 102(e) as Koyama et al. Koyama et al teach stabilized water-soluble dry solid compositions comprising proteinaceous bioactive substances, for example hormones. Aqueous solutions of the proteinaceous bioactive substances are combined with aqueous solutions a polysaccharide composed mainly of maltotriose units at a ratio of polysaccharide:protein of preferably 1 to 10,000. The weight ratio of the polysaccharide to the substance is at least 0.5, preferably from 1.0 to 10000. The

combined solutions are then dried, either by conventional procedures at reduced pressure and a temperature below 30°C, or else by freeze-drying. In one series of examples, greater than 90% of activity is retained after storage at 37°C for one month, which is consistent with Applicants' requirement for at least 53% retained activity after storage for 8 weeks at 25°C. The dry solid can be formed into a tablet. See, e.g., the Abstract; column 2, lines 10-24 and 38-66; Experiment 3; and the Examples. In view of the similarity in the components of the compositions and the retained activity of the compositions, the compositions of Koyama et al are deemed inherently to have the same storage stability, and T_g claimed by Applicants and are deemed to anticipate the compositions claimed by Applicants. Sufficient evidence of similarity between the compositions of Koyama et al and Applicants' claimed compositions is deemed to be present to shift the burden to Applicants to show that their claimed compositions are unobviously different than those of Koyama et al. Note that even a patentable difference in the process of making does not necessarily impart patentability to product-by-process claims where the product is otherwise anticipated by the prior art.

16. Claims 32-34, 37, and 47 are rejected under 35 U.S.C. 103(a) as being obvious over Koyama et al as applied against claims 26, 28, 29, 31, 43, 46, and 52 above, and further in view of Applicants' admission of the prior art at column 1, lines 59-62; column 4, lines 57 - 66; and column 5, lines 3-8. Koyama et al do not teach any examples in which conventional drying procedures at reduced pressure and a temperature below 30°C are used. However, it would have been obvious to one of ordinary skill in the art at the time Applicants' invention was made to form the dried compositions of Koyama et al using conventional drying procedures at reduced pressure and at a temperature below 30°C because as admitted by Koyama et al, such drying

procedures are conventional and are suitable for producing Koyama et al's desired products, and because as admitted by Applicants at column 1, lines 59-62, of the application, freeze-drying is costly in capital and energy and is irreproducible. Regardless of the method used to produce the dried compositions of Koyama et al, the dried compositions of Koyama et al would have been expected to have a T_g greater than 20°C because as admitted by Applicants at column 4, lines 59-60, the T_g for maltotriose is 76°C and as admitted by Applicants at column 5, lines 3-8, the T_g for water-soluble or water-swellable synthetic polymers is a function of molecular weight. Accordingly, the T_g for Koyama et al's polysaccharide composed mainly of maltotriose units would have been expected to be even higher than the 76°C for a maltotriose monomer. The T_g for Koyama et al's proteinaceous bioactive substances would also have been expected to be relatively high because the proteins are also water-soluble polymers of relatively high molecular weight. Even if Koyama et al's dried compositions were to contain several percent residual water after drying, in view of Applicants' admitted rule-of-thumb at column 4, lines 63-65, of an approximately 6°C decrease in T_g for each percent of moisture added, the dried compositions would still have a T_g greater than 20°C in view of the relatively high T_g of the major components.

17. Applicant's arguments filed October 3, 2002 have been fully considered but they are not persuasive.

The rejections under 35 U.S.C. 251 and 35 U.S.C. 112, first paragraph, set forth in paragraphs 6 and 7 of the previous Office action are maintained. Concerning the negative claim limitation excluding renin as the biologically active material, the examiner does not have the authority to overrule the case law, including Grasselli. Concerning the pH range of "about 7"

recited in claims 38 and 54, the use of the term "about" means that pHs somewhat below 7 are embraced within the scope of the claim. The original disclosure of pHs slightly higher than pH 7.0 does not provide support for pHs which are below pH 7.0.

The rejections under 35 U.S.C. 112, second paragraph, and the claim objections set forth in paragraphs 8 and 9 of the previous Office action are withdrawn in view of the claim amendments.

The obviousness-type double patenting rejection based upon Reissue Patent No. 37,872 (which issued based upon reissue application 09/270,791) and the provisional obviousness-type double patenting rejection based upon copending reissue application 09/939,688 are maintained for the reasons of record. No terminal disclaimer has been filed to overcome these rejections.

The rejection over the Townsend et al article set forth in the previous Office action is withdrawn. With respect to instant claims 39-41, the rejection over the Townsend et al article is withdrawn in view of the claim limitation requiring that the composition contain no more than 4 percent by weight of water (see the reasons set forth during prosecution of the parent application, Office action mailed November 14, 2000, page 12, first full paragraph). With respect to instant claims 42-43, the rejection over the Townsend et al article is withdrawn in view of the new claim limitations clearly excluding enzymes as the biologically active material.

The rejections based upon Koyama et al set forth in paragraphs 15 and 16 of the previous Office action are maintained.

Applicants contend that there is no basis for concluding that the method of Koyama et al yields a stable composition in a glassy state (the examiner agrees with Applicants that Koyama et al do not disclose the actual state of their resulting compositions). In particular, Applicants

contend that because not all of the methods of Koyama et al yield a stable product (and especially those methods of Koyama et al which use dextran), it can not be concluded that products of Koyama et al are in a glassy state because if they were, they would have been stable as demonstrated by the instant inventors. Firstly, it is not clear why Applicants' arguments at pages 21-23 distinguish between Koyama et al's "inventive polysaccharides" and Koyama et al's "ineffective stabilizers". The rejected claims generically recite "a carrier substance that is water-soluble or water-swellable" and do not discriminate among Koyama et al's stabilizers on the basis of composition per se. Accordingly, if the "inventive polysaccharides" of Koyama et al inherently result in the formation of a stable product in a glassy state, Applicants' claim limitations are met regardless of whether or not Koyama et al's "ineffective stabilizers" inherently result in the formation of a stable product in a glassy state. Applicants have not submitted any evidence that the "inventive polysaccharides" of Koyama et al do not inherently result in the formation of a stable product in a glassy state. Secondly, while the examiner agrees that certain "ineffective stabilizers" tested by Koyama et al do not achieve the same stabilizing effect as do Koyama et al's "inventive polysaccharides", this does not mean that the "ineffective stabilizers" of Koyama et al do not meet the stability requirements described by Applicants' for their stabilizers. For example, as described by Applicants at page 22 of the response, Koyama et al's use of dextran results in 65.3% and 81.5% retention of activity for two months at 37°C and 4°C respectively. These results, although not sufficient for Koyama et al, are fully consistent with Applicants' disclosed stabilizing effect, e.g., as shown in Example 13, where a stabilizing effect of 53% retention of activity for 8 weeks at 25°C is described. The examiner does not base his inherency argument on comparing the stabilizing properties of Koyama et al's "ineffective

stabilizers" with those of Koyama et al's "inventive polysaccharides"; rather, the inherency argument is based upon comparing the stabilizing properties of Koyama et al's stabilizers with the stabilizing properties of Applicants' claimed carrier substance that is water-soluble or water-swellable. A difference in stabilizing effect amongst Koyama et al's stabilizers does not rebut this inherency argument.

At page 22, first full paragraph, of the response, Applicants compare the stability achieved by Koyama et al using dextran with the stability achieved by Applicants using dextran. However, these experiments were carried out using different temperatures and times, using different proteins to be stabilized, and using different ratios of protein to stabilizer. This does not constitute a side-by-side comparison of the method of Koyama et al with Applicants' claimed methods, and it is not possible to draw any conclusion from these experiments as to whether or not the method of Koyama et al results the formation of a stable product in a glassy state. A "logical extension of [a] conclusion" is not a basis for determining a residual water concentration of a dried product, and again does not constitute evidence that the dried products of Koyama et al are not stable and/or are not in a glassy state.

Applicants have not submitted any probative evidence that Koyama et al do not produce dried compositions in a glassy state, or that Koyama et al's compositions are not storage-stable at 20°C. Accordingly, the inherency argument set forth in the rejection is not rebutted.

The examiner agrees that Koyama et al prefer freeze-drying, and that none of the examples employ evaporative drying. However, the disclosure of a reference is not limited to the reference's examples (In re Snow, 176 USPQ 328 (CCPA 1973)), and a disclosed preferred embodiment does not teach away from nonpreferred embodiments (In re Susi, 169 USPQ 423

(CCPA 1971)). Further, actual reduction to practice is not a prerequisite for patentability, nor is it a prerequisite for a patent or publication to qualify as prior art under 35 U.S.C. 102 or 103. It is also noted that Koyama et al specifically claim drying the aqueous solution at a temperature below 30°C and reduced pressure (see claim 6), which is further evidence of the obviousness of such a drying step. To the extent that Applicants are arguing that the disclosure of this procedure in Koyama et al is non-enabling, vague, surplusage, etc., Applicants are reminded that all U.S. patents are presumed to be valid, and this presumption includes, e.g., claim 6 of Koyama et al. In general, see MPEP 716.07, second paragraph.

Concerning paragraph 39 of the Franks declaration originally filed October 10, 2000, and re-submitted with Applicants' latest response, this paragraph does not establish how declarant has determined that in 1989 there were no conventional drying procedures carried out at a reduced pressure and a temperature below 30^0C. Also, the declarant limits his statement to the proteinaceous bioactive compound art, whereas the reference's statement could be interpreted as referring to the pharmaceutical drying art or more generally to the drying art. Disclosure in a reference is presumed enabled with the burden being on Applicants to prove non-enablement. Koyama et al's disclosure, and Koyama et al's claims drawn to drying at a temperature below 30^0C and reduced pressure (see claim 6), are not "mere surplusage" just because they may not be supported by any experimental results. Applicants' claims embrace innumerable carrier substances and biologically active materials which are not supported by any experimental results, yet the examiner would not characterize them as "mere surplusage". Applicants' arguments at page 24, third full paragraph, that drying without freezing "would destroy an unacceptably large fraction of their activity", and at page 24, fourth full paragraph, that Koyama et al do not suggest

the degree of drying required to obtain a composition that is in a glassy state, are not convincing because the arguments can not be tied in with Applicants' claim language. Applicants' claims do not specify any particular % retention of activity or degree of drying, and patentability must be based upon claimed, not unclaimed, differences over the prior art. In any event, as discussed above, the retention of activity disclosed by Koyama et al for their drying process is fully consistent with the retention of activity achieved by Applicants for their drying process. Koyama et al suggest drying to a degree which is conventional in other prior art drying processes and to a degree which is consistent with achieving the degree of stability achieved in Koyama et al's specific examples.

At pages 24-26, Applicants argue that there are numerous process parameters not disclosed by Koyama et al which would require experimentation, and that an invitation to experiment is not sufficient to support an obviousness rejection. The examiner agrees that there are numerous unspecified process parameters in Koyama et al, but this is true about every scientific publication. Koyama et al require experimentation, but there is a reasonable expectation of success because Koyama et al teach that such procedures "are feasible in the invention" (column 2, line 54). Further, the determination of operable and optimal process times, pressures, and temperatures is well within the ability of one of ordinary skill in the art because these are the fundamental variables which govern any drying process and would be routinely determined by one of ordinary skill in the art. Applicants' citation to In re Dow Chemical Co., 5 USPQ2d 1529 (Fed. Cir. 1988) is noted. As stated in Dow at page 1532, "There must be a reason or suggestion in the art for selecting the procedure used, other than the knowledge learned from the applicant's disclosure." This reason or suggestion is provided in

Koyama et al itself, i.e. it is prima facie obvious to practice processes which a reference discloses and claims are useful for producing the reference's product. There is a reasonable expectation of success in the art for the reasons discussed above.

The rejections over the Shah dissertation set forth in paragraphs 17-19 of the previous Office action are withdrawn in view of the amendments to the claims. Further, with respect to claims 38, 48, and 54, the Shah dissertation is deemed not to teach or suggest dissolving at the pH range recited in these claims for the reasons set forth at page 29, last full paragraph, of Applicants' response.

18. Claims 17 and 18 are allowed. Claims 19, 20, 22-25, and 45 would be allowable if rewritten or amended to overcome the claim objections set forth in this Office action. With respect to claims 17 and 18, the prior art of record does not teach drying a composition comprising the recited purified biologically active materials to a water content of no more than 4 wt. % by evaporating water at subatmospheric pressure while heating to a temperature not exceeding 80°C. Note that the Townsend et al article freezedries rather than heats in order to dry its compositions, that Koyama et al do not teach or suggest a water content of no more than 4% by weight, and that the Shah dissertation does not teach or suggest subatmospheric pressures. With respect to claims 19, 20, 22-25, and 45, the prior art of record does not teach drying a composition comprising the recited purified biologically active materials to a water content of no more than 4 wt. % by evaporating liquid water at a temperature not exceeding 80°C. Note that the Townsend et al article freezedries rather than heats in order to dry its compositions, that Koyama et al do not teach or suggest a water content of no more than 4% by weight, and that the Shah dissertation does not teach or suggest the recited purified biologically active materials.

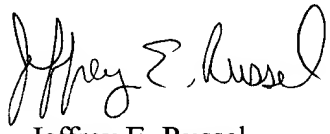
19. Applicant is notified that any subsequent amendment to the specification and/or claims must comply with 37 CFR 1.173(b).

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey E. Russel at telephone number (703) 308-3975. The examiner can normally be reached on Monday-Thursday from 8:30 A.M. to 6:00 P.M. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Brenda Brumback can be reached at (703) 306-3220. The fax number for Art Unit 1654 for formal communications is (703) 305-3014; for informal communications such as proposed amendments, the fax number (703) 746-5175 can be used. The telephone number for the Technology Center 1 receptionist is (703) 308-0196.



Jeffrey E. Russel
Primary Patent Examiner
Art Unit 1654

JRussel
November 20, 2002